

Technology Applications

Internet Bidding

Iowa DOT Phases in Internet Bidding

For contractors, bidding on highway construction projects for the Iowa Department of Transportation (Iowa DOT) used to involve a great deal of logistics. Contractors would bring a small army to the letting hotel, along with various support equipment like fax machines, computers, and printers. There they would set up camp for a few days and prepare their bids.

“Over the years, this monthly pilgrimage was getting more difficult,” said Roger Bierbaum, Iowa DOT Contracts Engineer. “Then one time a blizzard hit the day before a letting. Many of Iowa’s larger contractors, especially those from the far corners of the state, began to push Iowa to allow Internet bid submission.”

Since 1994, Iowa’s contractors had been able to use the American Association of State Highway and Transportation Officials’ (AASHTO, www.aashto.org) *Trns•port Expedite®* (See box.) software to submit their bids. This is referred to as one-way bidding, since contractors download bidding files from Bid Express® (Bidx.com™, an Info Tech, Inc. Company, www.infotech-fl.com), an online information service, and then submit their bids either on paper or on a disk. Iowa DOT started testing two-way electronic bidding with Bid Express in January 2000.

Bierbaum saw two potential obstacles and quickly made efforts to overcome them. The first was the submission of the proposal guarantee or bid bond. Bid bonds were still being submitted on paper, which meant that even if the bid were paperless, there would still be a requirement for an actual bond document to be submitted each time.

“After reviewing the options, Iowa DOT implemented annual bid bonds in

January 2001,” Bierbaum said. Therefore, one annual document covered all bids a contractor would make in a year. Bierbaum further explains that this was a popular option in itself. Now, almost all of our contractors who bid routinely with the Iowa DOT have an annual bid bond, even if they do not submit electronic bids.

The annual bid bond has other benefits, too. “Prior to using annual bid bonds, we used to have several bids each letting where the bid bond was incorrect. With annual bid bonds, the bond is checked weeks or even months prior to the letting and we never have an incorrect bid bond causing us not to read a bid.”

The second obstacle was the issue of the validity of digital signature. In the winter of 2001, the Iowa legislature passed the “Electronic Commerce Act,” which allowed digital signatures to be used as legally binding signatures on documents. Once this was on the books, Iowa DOT sprung into action. Digitally signed Internet bids were first accepted during the April 2001 letting.

“At the first letting, ten contractors submitted a total of 52 bids over the Internet. By October 2001, about 40 percent of the bids in the letting were submitted over the Internet. Through our February 2002 letting, 793 bids were submitted over the Internet for bids that totaled over \$1.1 billion. For each subsequent letting, we were getting more contractors submitting bids over the Internet for the first time.”

In Calendar 2003, the Iowa DOT received 2,501 bids over the Internet (81 percent of the bids submitted) for a value over \$2.5 billion. These days, the only non-Internet bids they receive are for the small, non-highway projects, or unique projects that attract new contractors.

Most agencies that implement elec-

tronic bidding see benefits quickly in terms of error reduction and an easier, more streamlined letting process. Bierbaum can point to an instance where Internet bidding literally saved the state millions of dollars.

“We had a situation where a bidder at the letting hotel determined he would be the only bidder on a project. He submitted a bid, which he thought to be close enough to the state’s estimate so a contract would be awarded. An unexpected bidder stayed at home and submitted a bid over the Internet for \$8 million less and ‘stole’ the contract.”

Internet bidding can also speed up the speed at which projects can be set up and bid. “We had several times where we needed to take bids under ‘emergency’ conditions. We receive information from our field offices and send a fax to the contractors that we think are qualified, informing them of the special letting. We tell them when the letting documents will be posted and when the letting will be. Using Bid Express, we have been able to compress the time from submittal of scope, to the contractor beginning work to less than a week.”

Bierbaum reports that there are more advantages for the agency. “We have seen greater competition. Some contractors are bidding on more projects than they did in the past because they have more resources bidding from their home office than they did bidding from a hotel room. We’ve also heard that contractors can more easily include last minute quotes in their bids, which results in lower bid prices for the DOT.”

The process of implementing Internet bidding included some “lessons learned” for Bierbaum and his staff—advice that he would gladly share.

“We learned you don’t forget the agency’s private key needed to open the bids. We won’t change the time of the

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letting by addendum again. We needed a backup Internet provider, in case the DOT's primary Internet system goes down. We needed something faster than an inkjet printer so the hundreds of bids submitted over the Internet can be printed and so we can quickly post the 'as-read' bids."

All of these minor lessons learned aside, Bierbaum points out that the process was smooth and the support and implementation services provided by the software supplier have always been on target.

Wisconsin Reaps Benefits of Internet Bidding

Wisconsin Department of Transportation (WisDOT) first became aware of Bid Express in 1997 when they were implementing the AASHTO pre-construction software modules offered by Info Tech. WisDOT had an existing service that it was using to communicate bidding information to contractors. "During our evaluation assessment we determined that we had three options: create new interfaces from the newly implemented modules to the existing bidding service, develop a new bidding service to interface, or use the Bid Express service that already interfaced," said Daid Castleberg, Construction Engineering Technology Supervisor with WisDOT.

The software was fairly new at the time and was offered to WisDOT as a way to provide current services to its contractors and expand on those services in the future using the Internet. "We decided to take the plunge and be the first state to offer bidding information on Bid Express."

Once the decision was made, it was time to convince the contractors that this was a good idea. "The biggest challenge facing the contractors in the initial or one-way bidding process was working on the Internet to get their information," Castleberg said.

It was also a change for them to go from an all paper process to a partially electronic process. As a result, WisDOT phased in the use of the software. "When we first implemented, paper was still the main form for bid entry and considered the 'controlling' document.

Preparing the bid using Expedite was still optional and the completed Expedite file was submitted on a diskette. They still submitted a signed paper printout with this method. After a year we went to mandatory use of Expedite and submission of bids on diskette with paper printout backup. Paper still controlled."

Contractors immediately felt the impact of the implementation, but quickly saw the benefits, too. "The time savings for the contractor was the 24/7 access to Bid Express to download their bid files, and in preparing and editing the bids using Expedite," he said. With Bid Express, the contractors also had access to planholders and eligible bidders lists that were helpful to those subcontractors who needed to know to whom they should potentially submit quotes.

There were immediate benefits on the agency side, too. WisDOT received less support calls from contractors looking

for bidding information and implemented simple procedures for creating the bid files and posting information to Bid Express, which saved time over the old way of doing business.

However, the biggest impact for the department was clearly on the post-letting processing side. With the bid files on diskette, it was a simple process to load the data for further processing. "We no longer had to hand-key all the bid data from paper forms submitted by the contractor. Previously, we had hired six temporary employees each month to key the data from the paper forms. This processing took four to six hours once all the edit checking was done. With one-way bidding, we dropped down to three temps working for two to four hours."

Castleberg and his team felt that the next step was to go with two-way electronic bidding. With this method, bidding information is not only down-

Trns•port Expedite®

Trns•port Expedite is a Windows application designed to work with Trns•port PES/LAS, or any similar proposal preparation and bid letting management system. Expedite allows bidders to receive proposal information including item schedules, DBE requirements, and affidavits; enter all information required for a valid proposal; and submit item bids in a secure machine-readable form. Expedite supports proposals with Cost Plus Time components, alternate sections and alternate items, lump-sum and fixed-price items, information-only proposals, and distribution of amendments in electronic form.

Expedite consists of several components, some intended to be run by the transportation agency and others to be run by bidders. The first component will convert a flat file of proposal item information, taken from PES or a similar system, into an electronic proposal or amendment file for distribution to prospective bidders. The second component, called the electronic bid manager, is run by the bidder and allows item bids to be entered interactively, as on a spreadsheet, with item extensions and section and proposal totals calculated and displayed immediately. It also facilitates the submittal of DBE commitment information and an electronic bid bond identifier or manually-delivered check or payment indication. The third component, run by the transportation agency, checks the electronic bid for validity and data errors, prints a log listing information about the electronic bid for comparison to the paper bid, and produces a flat file suitable for loading into LAS or a similar system. The fourth component allows the transportation agency to enter bid data from proposals submitted manually in a PC-based program for loading into LAS or a similar system. The final component is a program that allows the transportation agency to electronically verify the bidder's bid bond.

To simplify the transportation agency's implementation and management of Expedite licensing, the electronic bid manager component and its associate documentation may be copied by the transportation agency for distribution to and use by all its prospective bidders, provided the software and documentation are not modified in any way.

Expedite software is used in bid preparation by 38 state transportation agencies, and Bid Express users can download it for free. When you prepare your bid using Expedite Bid, quantities come across automatically. All you have to do is fill in the unit prices, avoiding costly computation errors. Expedite Bid will also alert you to blanks or errors in your bid preparation, and has the additional capability to do on-line verification of bid bonds via Bid Express. Expedite Bid can track DBE commitments and amounts, and handle cost plus time bidding. Use Expedite Bid to electronically prepare and check your bid; then, in states where two-way bidding has been established, you can submit your bid over the Internet with Bid Express.

For further information on Expedite go to www.aashtoware.org. For further information on Bid Express, go to www.infotechfl.com.

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loaded from the Bid Express web site, but also completed bids are submitted back via the Internet. He knew that the contractors might not be eager to get on board. But given the success of one-way bidding, they forged ahead.

"The contractors were reluctant when we first proposed the idea of two-way bidding to them. They were hesitant to remove themselves from physically handing off their bid proposal. They had questions about creating digital IDs, error checking, verification of receipt of bids, and Internet connection failures. However, I believe that we did a good job of advanced planning with the contractors, so that we were able to answer their questions and rest their fears. Once they realized that it would not be a difficult process for them to manage and they realized the benefits to them, they were ready. We worked with a group of 10 to 15 contractors, trained them, and conducted two pilot lettings before our final roll-out of two-way bidding. This group of pilot contractors sold the idea to the rest of the industry.

Wisconsin's first two-way letting was a success. There were 21 proposals to let and 99 bids were submitted. Of those, 46 were submitted over the Internet. The contractors did not report any problems. Castleberg attributes this to good planning and training. With two-way bidding, the agency eliminated the remaining three temporary employees.

Castleberg says that two-way bidding quickly became the norm simply because the contractors like it. "This was evident in the number of contrac-

tors submitting bids electronically—even through it wasn't mandatory. They could still submit bids on diskette, but this soon became a small percentage of the bids submitted. Because they were submitting bids from their offices they no longer had to travel to Madison every month for the letting. This saved them hundreds of dollars each month in travel and hotel costs. The department still held a public reading of the results, but since they were being posted on Bid Express, the contractors could also view the results at their office."

Use of Bid Express has also changed the process for getting subcontractor quotes. "Previously, most of the quoting was done in person at the hotel, the evening before the letting. Now quotes are done in advance by fax and e-mail, therefore contractors are preparing their bids in a more timely fashion.

Plus, with Bid Express, contractors who bid in Wisconsin, as well as neighboring states like Iowa, Michigan, and Minnesota can use the same Bid Express service for preparing those bids."


Castleberg advises agencies interested in implementing Bid Express to start with good planning and to get the contractors involved early. "The more they feel involved, and perceive they are part of the process, the better buy-in you will have from them." He also feels that the training and pilot lettings were vital to the process.

"The Bid Express support staff was extremely helpful during our implementation process. We invited them on-site on two occasions to meet with our staff

and with contractors to explain the service and answer any questions they had. During our set-up, they were very helpful in answering our technical questions, so that we could get everything configured and running properly. Ongoing support has been very good.

"Our biggest benefit, in addition to reducing the number of staff needed, is in the savings of processing time. A typical letting contains 45 proposals with 175 bids submitted. Prior to one-way bidding, we were still processing and analyzing as late as 5 p.m. to 7 p.m. on the day of the letting. With one-way bidding, we are done by 3 p.m. to 4 p.m., and with two-way bidding we are done by 1 p.m." Castleberg and his team do less error checking because the Expedite application does extensive error checking prior to submittal.

Do errors sometimes appear? "Our only errors are from the handful of diskette proposals with paper corrections and a possible 'paper only' submittal." In Wisconsin, diskettes are mandatory if not submitting two-way, and a paper-only submittal costs the contractor \$75 for processing.

"We have averaged 92 percent of bids being submitted via the Internet since we implemented two-way bidding. As a result, the department discontinued holding the public reading at a local hotel that had been used for over 25 years and moved it to a conference room in our own building. Where there used to be over 200 persons in attendance at the letting, we are now lucky if one or two contractors stop in for the reading." 

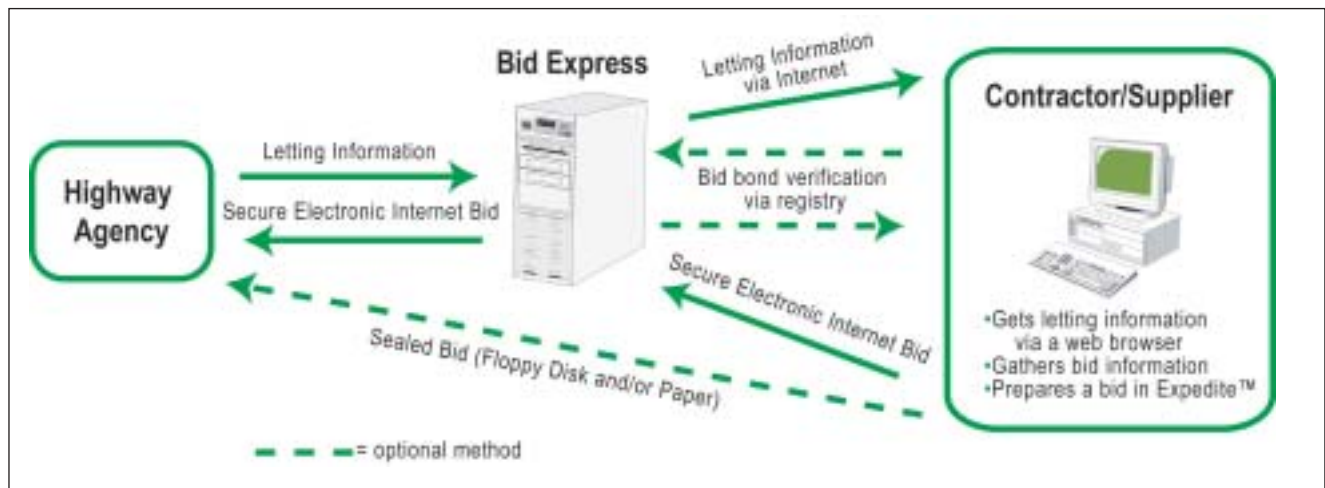


Diagram illustrates the flow of information between the agency and bidding contractor, using electronic/Internet bidding.